

Amendments to the Claims

This list of claims will replace all prior versions, and listings, of claims in the application.

Listing of Claims:

Claim 1 (original): A system for regulating the flow of cerebrospinal fluid from the brain of an individual comprising an implantable controller adapted to be in fluid communication with said cerebrospinal fluid and having first and second drainage paths, wherein said controller directs the flow of said cerebrospinal fluid into said first or second drainage paths in response to the inclination of said individual.

Claim 2(original): The system of claim 1, wherein said first drainage path is a supine flow path, and wherein said controller directs the flow of said fluid into said supine flow path when said individual's inclination is supine or substantially supine.

Claim 3(original): The system of claim 1, wherein said second drainage path is an upright flow path, and wherein said controller directs the flow of said fluid into said upright flow path when said individual's inclination is vertical or substantially vertical.

Claim 4(original): The system of claim 1, further comprising an inclination sensor for sensing the inclination of said individual, and wherein said controller is responsive to said inclination sensor.

Claim 5(original): The system of claim 4, further comprising a bi-stable latching valve, and wherein said controller directs the flow of said fluid by actuating said latching valve to allow for fluid communication with said first or said second drainage paths.

Claim 6(original): The system of claim 2, wherein said supine flow path comprises a passive low resistance flow path.

Claim 7(original): The system of claim 6, wherein said passive low resistance flow path maintains a maximum intraventricular pressure of about 15 mm Hg.

Claim 8(original): The system of claim 1, further comprising a programmable variable check valve in said second flow path, wherein the cracking pressure of said check valve is modified based on the inclination angle of said individual.

Claim 9(original): The system of claim 8, wherein said cracking pressure is continually modified to maintain a

relatively stable intraventricular pressure for a range of inclination angles.

Claim 10(original): The system of claim 9, wherein said stable intraventricular pressure is between 5 and -5 mm Hg.

Claim 11(original): The system of claim 1, wherein said controller implanted in said individual further comprises:

- an inlet connection;

- an outlet connection spaced from said inlet connection;

- an inlet cannula with a distal and proximal end, wherein said distal end of said inlet cannula is located near the ventricle of the brain and said proximal end of said inlet cannula is connected to said inlet connection of said controller; and

- an outlet cannula with a distal and proximal end, wherein the location of said distal end of said outlet cannula is selected from the group consisting of the peritoneal space and the right atrium of the heart, and said proximal end of said outlet cannula is connected to said outlet connection of said controller.

Claim 12(withdrawn): A method of regulating the flow of cerebrospinal fluid from the brain of an individual, comprising:

determining the inclination angle of said individual; and
directing the flow of cerebrospinal fluid through one of two flow paths in response to said determined inclination angle.

Claim 13(withdrawn): The method of claim 12, wherein said inclination angle is determined by an implantable inclination sensor.

Claim 14(withdrawn): The method of claim 12, wherein one of said flow paths is a substantially supine mode flow path and is a passive low resistance path.

Claim 15(withdrawn): The method of claim 12, wherein one of said flow paths is an upright mode flow path further comprising a programmable variable pressure check valve, wherein the cracking pressure of said check valve is modified based on said inclination angle of said individual in order to maintain relatively stable intraventricular pressure.

Claim 16(withdrawn): The method of claim 15, wherein said stable intraventricular pressure is between -5 and 5 mm Hg.

Claim 17(withdrawn): An implanted system for maintaining a stable intraventricular pressure of an individual by

regulating the flow of cerebrospinal fluid from the brain of said individual, comprising:

a variable cracking pressure valve assembly in fluid communication with said cerebrospinal fluid, wherein the cracking pressure of said valve assembly comprises a gravitational component, responsive to changes in inclination angle and a fixed component, wherein said fixed component is responsive to actions from a microprocessor-based controller system; and
said microprocessor-based controller system, capable of adjusting said fixed component of said cracking pressure.

Claim 18(withdrawn): The system of claim 17, further comprising a weighted ball contained within said valve assembly, wherein said gravitational component is created by said weighted ball.

Claim 19(withdrawn): The system of claim 17, wherein said microprocessor adjusts said fixed component to create a stable intraventricular pressure profile over a range of inclination angles.

Claim 20(withdrawn): The system of claim 17, further comprising a spring having an end in contact with a movable element contained within said valve assembly, wherein said

fixed component is created by the bias of said spring and said fixed component is adjusted by changing said bias of said spring by moving said movable element.

Claim 21(withdrawn): The system of claim 17, said valve assembly further comprising:

- an inlet port adapted for the intake of said cerebrospinal fluid;

- an outlet port spaced from said inlet port;

- a first ball positioned in said valve assembly, between an open position in which said inlet port is in fluid communication with said outlet port and a sealed position in which said ball seals said inlet port;

- a second ball positioned in said valve assembly, biased against said first ball, whereby the force needed to overcome said bias and allow said first ball to move from said sealed position to said open position is a function of the gravitational force on said second ball;

- a movable element, with movement responsive to said microprocessor-based subsystem; and

- a spring, biased between said second ball and said movable element, whereby said movable element can be moved to cause a change in bias of said spring by said microprocessor-based subsystem.